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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER CORDRAY, DENNIS R	
			ART UNIT	PAPER NUMBER
			1791	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/581,459	Applicant(s) HAHNLE ET AL.	
	Examiner DENNIS CORDRAY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-8 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's amendments and arguments filed 6/4/2009 have overcome the rejections under 35 U.S.C. 112, 2nd paragraph. The cancellation of all claims and presentation of newly written claims has removed the basis for the outstanding rejections over the prior art. All outstanding rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made over the cited prior art to address the newly presented claims.

Applicant's arguments have been fully considered but they are not persuasive.

Regarding Lai et al, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) Furthermore, "[t]he prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Lai et al discloses making paper from pulp containing 10% of a titanium dioxide filler and 0.01%, 0.05%, 0.1%, 0.2% or 1% of a vinylamine polymer based on fiber. The

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range of addition of vinylamine polymer overlays the claimed range. The vinylamine polymer reads on the claimed cationic polymer containing vinylamine units.

Handsheets are formed from by pressurized pressing between blotter stock and then dried thus the pulp is deposited on a substrate and dewatered or, at least, such deposition and dewatering would have been obvious to one of ordinary skill in the art as a typical process for forming paper. The claimed ash content will be obtained in the process of Lai et al or, at least, would have been obvious because, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "Products of identical chemical composition can not have mutually exclusive properties."

In response to applicant's arguments against the references Hartmann et al, Utecht et al, Takahata et al, Snow et al and Koichi et al individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Hartmann et al discloses adding vinylamine containing polymers overlaying the claimed polymers to pulp comprising kaolin filler and making paper having the claimed ash content. In an example, the polymers are added in an amount of 133, 153, 500 and 1000 grams per ton of paper produced, which overlays the claimed range (cols 15 and 16, Examples 24 and 25).

Utecht et al discloses using vinylamine containing polymers for retention and drainage aids and as fixatives for making all known paper, paperboard and cardboard grades by adding them to the stock in amounts from 0.01% to 0.1% by weight, which overlays the claimed range. Utecht et al discloses fillers added to paper stock include clay, chalk (calcium carbonate), titanium dioxide and kaolin. Substituting one commonly known filler for another would have been obvious to one of ordinary skill in the art.

The level of carbamate moieties formed from the vinyl amine units in the Utecht et al polymer is as low as 0.1 mol-%, preferably from 5 mol-% to 10 mol-% (col 6, lines 1-7), which leaves the majority of vinylamine units untouched. The open language of the instant claims only requires the polymer to contain vinylamine units and does not preclude additional non-vinylamine monomeric units. The polymers of Hartmann et al can include up to 25% of other monomers (p 5, lines 48-50).

The data presented in Table 2 of the instant Specification are directed to using a 95% hydrolyzed polyvinylformamide polymer in an amount of either 0.024% or 0.036% in a pulp comprising 100% titanium dioxide (percentages based on the absolute dry mass of the pulp) and other papermaking additives to make a paper having an ash content of 29.7 to 32.7%. In another example, a 60% hydrolyzed polyvinylformamide polymer is used in the same pulp in an amount of 0.024% to make a paper having an ash content of 32.1% (same basis). In contrast, the claims embody a process of making paper using a pulp containing any vinylamine containing polymer, the vinylamine units formed by 20% to 100% hydrolysis of formyl groups in a polymer containing N-vinylformamide, in an amount from at least 0.0005% and less than 0.05%;

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and any amount of a filler of titanium dioxide or calcium carbonate to make paper having an ash content from 3-40 wt-%. The data provided in support is not commensurate in scope with the claims.

Claim Objections

Claim 4 is objected to because of the following informalities: in line 5, the word "of" should be inserted between the word "content" and the numerical range "3-40". Appropriate correction is required.

Examiner's Comment

Claim 6 as written requires a copolymer containing each and every recited species of monomer. While such a polymer may not be obvious over the cited prior art, it is the Examiner's opinion, although the correct language is missing, that the recited species are intended to be referred to in the alternative as members of a Markush grouping and the claim is rejected based on this opinion. Applicant is requested to review the claim language and to either verify the Examiner's interpretation or to affirm that each and every monomer recited is required to be included in the polymer.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 4-8 are rejected under 35 U.S.C. 103(a) as unpatentable over Lai et al (EP-331047 A).

Claims 4 and 5: Lai et al discloses a papermaking process comprising the addition of a polymer containing vinylamine units to a pulp stock containing titanium dioxide (TiO_2) as a retention aid (fixing agent for the TiO_2), and draining, or dewatering, the stock to make paper. The polymer is made by hydrolyzing from 10% to greater than 99% of the formyl groups in a polymer containing N-vinylformamide units. In an example, paper is made from a pulp stock, to which has been added 10% TiO_2 and 0.01% to 0.05% of the polyvinylamine polymer, each based on the weight of the fiber (Abs; p 3, lines 30-42 and 55-58; p 4, lines 1-4; p 5, lines 2-6 and 44-56; p 8, lines 19-35, Example 12). The disclosed amounts overlay the claimed range of addition. The ratios of polyvinylamine polymer/ TiO_2 for the above additions are 0.001 and 0.005, or 0.1/100 and 0.5/100, which lie within the claimed range. Lai et al discloses that the hydrolyzed polymer is cationic where acid hydrolysis is used (p 5, lines 24-39).

Handsheets (paper) are formed from by pressurized pressing between blotter stock and then dried thus the pulp is deposited on a substrate and dewatered or, at least, such deposition and dewatering would have been obvious to one of ordinary skill in the art as a typical process for forming paper. The claimed ash content will be obtained in the process of Lai et al or, at least, would have been obvious because,

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where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

“Products of identical chemical composition can not have mutually exclusive properties.”

Claim 6: Lai et al discloses that the polymers can comprise additional monomers and recites species overlaying the claimed species (p 5, lines 48-50).

Claim 7: In Example 12, groundwood and chemical pulps are used. The other claimed pulps represent typical papermaking pulp sources and would have been obvious to one of ordinary skill in the art.

Claim 8: Lai et al does not disclose the end use of paper made by the process. Absent convincing evidence of unobvious results, it would have been obvious to one of ordinary skill in the art to use the paper as a base paper for making any kind of paper, including the claimed products.

Claims 4-8 are rejected under 35 U.S.C. 103(a) as unpatentable over Hartmann et al (5008321) in view of Utecht et al (6184310) and as evidenced by Lai et al.

Claims 4 and 5: Hartmann et al discloses an example (Example 25) of a papermaking process comprising forming a pulp stock comprising 67% pulp and 33% kaolin filler, adding a polymer made in Example 1, which is made by hydrolyzing 30% of the formyl groups in a polymer containing N-vinylformamide units to vinylamine units, to the pulp stock as a retention aid (fixing agent for the filler), and making paper. Making

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paper inherently involves dewatering the pulp. In the example, the polymer is added in the amount of 500 g/ton of paper, or about 0.05% by weight of the pulp. In the examples, the ash retention was 55.2%, which is about 18.2% of the paper. The ratio of polymer to filler in the example is 0.0015, or 0.15/100, which lies within the claimed range (Abs; col 10, lines 11-55, Example 1; col 16, Example 25). More generally, Hartmann et al discloses that the polymers are from 5% to 100% hydrolyzed (col 7, lines 39-67).

Hartmann et al does not disclose a cationic polymer. Hartmann et al does disclose that the hydrolysis can be carried out in the presence of an acid (Abs; col 2, lines 30-32) and, in the above Example 1, acid hydrolysis is used, which results in a cationic polymer (see Lai et al p 5, lines 24-39 if evidence is needed).

Hartmann et al does not disclose a calcium carbonate or titanium dioxide filler.

Utecht et al discloses polymers containing vinylamine units made by hydrolyzing from 0.1% to 100% of the formyl groups in a polymer containing N-vinylformamide units. From 0.1 mol-%, preferably from 5 mol-% to 10 mol-% of the vinyl amine units are converted to carbamate moieties (col 6, lines 1-7), which leaves the majority of vinylamine units unconverted. Note that the open language of the instant claims only requires the polymer to contain vinylamine units and does not preclude additional non-vinylamine units. The polymers are used as retention and drainage aids and as fixatives for making all known paper, paperboard and cardboard grades by adding them to the stock from 0.01% to 0.1% by weight. Suitable fillers used in making papers are

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clay, chalk (calcium carbonate), titanium dioxide and kaolin (Abs; col 3, line 62 to col 4, line 4; col 6, line 56 to col 7, line 4; col 7, lines 14-18).

The art of Hartmann et al, Utecht et al and the instant invention is analogous as pertaining to making paper comprising fillers and vinylamine containing polymers. It would have been obvious to one of ordinary skill in the art to use the claimed fillers in the process and paper of Hartmann et al in view of Utecht et al as functionally equivalent fillers well known in the art and to have a reasonable expectation of success. Obtaining an ash content in the claimed range would also have been obvious for reasons previously given.

Claim 6: Hartmann et al discloses that the polymers can comprise additional monomers and recites species overlaying the claimed species (col 3, lines 1-48). Utecht et al also discloses additional monomers overlaying those claimed (col 2, line 56 to col 3, line 58).

Claim 7: Hartmann et al discloses paper made from waste, thermochemical, groundwood and chemical pulps (cols 15 and 16, Examples 24 and 25). Utecht et al discloses types of pulp used for making the paper that overlay the claimed species (col 6, line 65 to col 7, line 2; col 9, lines 9-12, Examples). The other claimed pulps would have been obvious as typical papermaking pulps.

Claim 8: Hartmann et al does not disclose the end use of paper made by the process. Absent convincing evidence of unobvious results, it would have been obvious to one of ordinary skill in the art to use the paper as a base paper for making any kind of paper, including the claimed products.

Claim 8 is also rejected under 35 U.S.C. 103(a) as unpatentable over Lai et al in view of Takashata et al (3933558), Snow et al (5830318) or Koichi et al (JP-09-217292, machine translation used and included with the Office Action).

The disclosure of Lai et al is used as above. Lai et al does not disclose the kinds of paper made.

Takashata et al discloses a laminated decorative sheet (construction material) comprising a base paper loaded with titanium-oxide or other filler to impart desired color or opacity (Abs; col 3, lines 22-32).

Snow et al discloses a cigarette tipping paper comprising from 20% to 40% by weight of calcium carbonate to impart opacity (Abs; col 3, lines 38-40).

Koichi et al discloses a filled paper comprising from 5 to 35 parts (based on 100 parts bone dry weight) by weight of a mixture of calcium carbonate and titanium dioxide to impart opacity and whiteness. The papers made include India paper (Abs; pars 0001, 0002 and 0018).

The art of Lai et al, Takashata et al, Snow et al, Koichi et al and the instant invention is analogous as pertaining to papers containing calcium carbonate and/or titanium dioxide. It would have been obvious to one of ordinary skill in the art to make a base paper for the claimed paper products using the process of Lai et al in view of Takashata et al, Snow et al or Koichi et al to obtain the opacity needed for the products.

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Claim 8 is further rejected under 35 U.S.C. 103(a) as unpatentable over Hartmann et al in view of Utecht et al and further in view of Takashata et al, Snow et al or Koichi et al.

The disclosures of Hartmann et al and Utecht et al are used as above. Hartmann et al and Utecht et al do not disclose the kinds of paper made. Utecht et al does disclose that any known grade of paper can be made using the polymers.

The art of Takashata et al, Snow et al and Koichi et al is used as above.

The art of Hartmann et al, Utecht et al, Takashata et al, Snow et al, Koichi et al and the instant invention is analogous as pertaining to papers containing inorganic fillers. It would have been obvious to one of ordinary skill in the art to make a base paper for the claimed paper products using the process of Hartmann et al in view of Utecht et al and further in view of Takashata et al, Snow et al or Koichi et al to obtain the opacity needed for the products.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791